

of 10–12 millims., and long been furnished with the wing-like cephalic ridges (which make their appearance when it is about 6 millims. in length).

Unfortunately this interesting discovery has given us no definite information as to the mode of introduction. No remains of animal matters could be detected in the contents of the stomach; but who can tell how long the embryos had already been in the stomach? A second young cat, which had eaten the mucous membrane of the stomach of the former, together with the parasites still living in it, showed the worms on the following day likewise in the stomach, and hardly perceptibly altered from their previous condition.

It appears clear to me, however, that it is not by any of the larger animals that the embryos of *Ascarides* are conveyed into the intestine of their definitive bearer. As things remain from the preceding observations, we need for the completion of our knowledge of the life-history of the *Ascarides* only a single element. May we soon succeed in filling up this gap, and thus bring the commonest of the human Entozoa completely within the domain of science.

L.—*Note on some new Facts in Botanical Geography.*

By EDMOND BOISSIER*.

By generalizing observations which are nearly always incomplete (as we are still but imperfectly acquainted with most floras), botanists, ascertaining the predominance in some particular botanical region of certain families or genera, hurry sometimes, and prematurely, to the conclusion that this region is their exclusive habitat. Nevertheless new facts come from time to time to show us that there is nothing absolute in the laws which have governed the present distribution of plants upon the surface of the globe; and some interest attaches to the registration of these facts and to the combination in this manner of the materials which will perhaps hereafter assist in explaining the formation of the different floras.

There have recently been discovered in Europe and Asia Minor some species which are particularly interesting, inasmuch as their congeners inhabit very distant regions. The first of these is a *Dioscorea*. The *Dioscoreæ* are dioecious monocotyledonous plants with generally a twisting and climbing stem. Their root is a tuber; and that of some species is employed as food, under the name of Yam. The genus *Dioscorea* is very numerous in

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all the tropical regions, both of the Old and New World. Only a few species inhabit the temperate regions of the northern hemisphere, and among these I may cite the *D. villosa* of the United States, and in Japan the *D. Batatas*, recently introduced among us as an alimentary root under the name of the Japanese Yam. Hitherto no European species of *Dioscorea* has been known, until, a few years ago, it was reported that M. Bubani, an Italian botanist, had found one on the Pyrenees. As the details of this discovery were nowhere published, it was supposed that there might be some error of determination; it was thought that this could only be a *Tamus*, a European genus of the same family, very distinct from *Dioscorea* in having its fruit a berry and not a capsule, but of which the very similar aspect may easily, when it is only in flower, lead to its being confounded with the latter genus. This, however, was by no means the case; I have just received from M. Bordère, of Gèdre, in the Hautes-Pyrénées, some specimens of the plant in question, which, from its tuberous root and its membranous 3-celled capsules, undoubtedly forms part of the genus *Dioscorea*. *Dioscorea pyrenaica*, Bub., is an alpine plant which grows upon the calcareous débris on the southern slope of the Col de Gavarnie; and, what is very remarkable, by its dwarfed and flexuous and not climbing stems it exactly recalls (although specifically distinct) other alpine *Dioscorea*, such as *D. nana* and *D. multinervis*, which must be sought in the Andes of Chili and Peru and upon the mountains of Mexico.

A second curious fact is the discovery, also dating a few years back, of a *Pelargonium* among the mountains of the East. The genus *Pelargonium*, which includes the so-called Geraniums cultivated in our conservatories, is characterized, in the family of which it forms a part, by the nectariferous tube, which descends from the calyx and becomes united throughout its length with the peduncle; it has hitherto been regarded as exclusively indigenous in the southern hemisphere, most of its species inhabiting the Cape of Good Hope, and a few Australia. But M. Kotschy brought from the Taurus in Cilicia a beautiful plant belonging undoubtedly to this genus; and it has since been found along the whole of the same chain, from Pamphylia to Armenia. Like some other species from the Cape, *Pelargonium Endlicherianum* has the inferior petals very small and nearly aborted; the upper ones, which are very large and of a fine purple, render it an ornamental plant, which is the more valuable as it can bear our winters.

I now pass to the third species that I have to mention here. It is already many years since Bertero collected in Chili a parasitic plant growing in great abundance upon the branches of an

Adesmia, a shrub belonging to the family Leguminosæ. M. Guillemin found that it formed a new genus, which he described under the name of *Pilostyles*. It has no root, stem, or leaves, and consists only of a campanulate flower of 2 lines in length, sessile upon the bark of the *Adesmia*, the epidermis of which it tears during its development. It is diœcious; and hitherto only the male plant is known. The flower is surrounded at the base by a few bracts, and consists of a calyx of four oblong and imbricated parts, of a corolla with four spatulate petals, also imbricated, and exceeding the calyx a little, and, lastly, of a thick, short, obtuse central column, which is attenuated in its lower half and surrounded about the middle by a ring formed of three rows of unilocular anthers, above which there is another, narrower one, composed of closely approximated papillæ. This column is solid, and formed of cellular tissue; but a transverse section, when magnified, shows the orifices of a very few isolated tracheæ. The flowering over, the flower falls, leaving a concave depression upon the bark of the *Adesmia*. This curious production of flowers with no stalks gave rise at first to the strange notion that the *Pilostyles* is only a monstrosity of the normal flower of the shrub on which it grows; but this opinion could not maintain its ground for a moment in the presence of the details of structure and the non-axillary insertion of this singular plant, which may be arranged very naturally in the family *Rhizanthææ*, as a miniature of those gigantic *Rafflesia* which, in the Sunda islands, are parasitic upon the roots of other shrubs.

The naturalist Pohl also brought from Brazil a second species of the same genus, growing upon the branches of a *Bauhinia*; but for many years no new fact has been added to the history of *Pilostyles* until this winter, when, in examining a collection of dried plants collected in the alpine region of the mountains of the east of Asia Minor by M. Haussknecht, I found the branches of a spiny *Astragalus* covered at the base and round the points of insertion of the leaves with small reddish globular bodies which immediately reminded me of the Chilian plant. It was, in fact, a *Pilostyles*, resembling *P. Berterii* in all its principal characters, but differing specifically in the absence of bracts, the shorter flower, and having the pieces of the calyx and corolla to the number of five or six instead of four. My friend Dr. J. Müller has been kind enough to make a very particular microscopic analysis of this curious production, and has found other differences. Thus, in the oriental plant, the ring of unilocular anthers round the central column is formed of two instead of three rows of anthers; the column itself is shorter, and is not narrowed in its inferior portion. It is a very singular fact, that whilst the

male individuals of *Pilostyles* grow so abundantly upon the branches of the *Adesmia* in Chili and on those of the *Astragalus* in the east, the female plant still remains unknown; there is here a gap to be filled up, in order to complete the description of this curious genus. Perhaps, according to Dr. Müller, the ring of papillæ surmounting that of anthers in both species may represent a row of aborted ovaries, as would seem to be indicated by a certain analogy of position with the flowers of the Aroideæ.

Here we have, therefore, an oriental and alpine species, *Pilostyles Haussknechtii*, coming to complete a genus hitherto known only from South America, and of which all the species, singularly enough, are parasitic upon shrubs of the family Leguminosæ. Hitherto we did not know, either in Europe or in Asia Minor, any Rhizanth,—the *Cytinus*, another plant parasitic upon the roots of the *Cisti* in the Mediterranean region, being arranged in a neighbouring family on account of its stem (which bears several monœcious flowers), its bilocular anthers, and other important characters.

It would have been easy for me to enlarge this list of *disjointed* species—that is to say, species growing in a botanical region very distant from that in which the rest of their genus or family live; but, without going in search of other little-known examples of this curious fact in botanical geography, we are acquainted with some which surprise us the less because we have them always under our eyes. Is it not singular, for example, that we find in the floras of Southern Europe only a single Myrtle and a single Laurel, whilst all the rest of the very numerous families to which these shrubs belong inhabit the tropical or subtropical countries of both continents? If, however, we consider that in the Tertiary period the Myrtles and Laurels were diffused in Central Europe, we get a glimpse of an explanation, being led, as has been so well shown by M. Alph. Decandolle in his 'Géographie Botanique,' to assume species of different antiquities, and to hope that, as our knowledge of the floras of preceding geological epochs becomes more complete, it will by degrees make us better understand the present distribution of plants.

BIBLIOGRAPHICAL NOTICE.

The Geology and Scenery of the North of Scotland; being Two Lectures given at the Philosophical Institution, Edinburgh. With Notes and an Appendix. By JAMES NICOL, F.R.S.E., F.G.S., &c. 12mo. Edinburgh, 1866.

PROFESSOR NICOL has three chief objects in these Lectures,—first, to elucidate the close and very evident connexion of the geological